

REMARKS

The following is intended as a full and complete response to the Office Action mailed on January 19, 2005. Claims 1-14 were examined. The Examiner rejected claims 1, 4, 7 and 11 under 35 U.S.C. § 102(b) as anticipated by Juday (U.S. Patent No. 6,680,797), claim 5 under 35 U.S.C. § 103(a) as obvious in view of Juday, claim 6 under 35 U.S.C. § 103(a) as obvious in view of Juday in combination with Li (U.S. Patent No. 6,522,467), and claims 2, 8, 12-13 and 14 under 35 U.S.C. § 103(a) as obvious in view of Juday in combination with Chen (U.S. Application No. 2003/0103718). In addition, the Examiner rejected claim 2 under 35 U.S.C. § 112 as indefinite and objected to claims 8-10 for certain informalities.

In response, Applicant is amending independent claims 1, 7 and 11 and canceling claim 2. No new matter has been added by the amendments.

Objections to the Claims

Applicant is amending claims 8-10 to correct the dependencies cited by the Examiner. Applicant therefore respectfully requests that the objections to these claims be withdrawn.

Rejection under 35 U.S.C. § 112

Applicant has canceled claim 2, without prejudice, and therefore respectfully requests that this rejection be withdrawn.

Rejections under 35 U.S.C. § 102(b) and 103(a)

Claim 1, as amended, recites the limitations that the P-polarization beam and the rotated S-polarization beam are separate from one another when received and processed by the liquid crystal tunable filter and that the beam waists of these two beams are located substantially on the center of a liquid crystal cavity in the liquid crystal tunable filter. Juday does not teach or suggest these limitations.

Juday discloses a polarization-independent optical switch. A polarization beam splitter (10) is used to split an incoming beam into two beams polarized independently of one another. One of these two beams is passed through a wave plate (20), which changes the polarization of this one beam to match that of the other beam. The two beams are then recombined into a single beam by beam combiner (30) and passed through a controllable spatial light modulator (SLM)

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(70), which includes a reconfigurable liquid crystal device (35) that can be controlled to diffract the combined beam in any desired direction. The ability to diffract the combined beam in any desired direction provides the disclosed system with its switching functionality. See generally Juday at col. 9, lines 26-67. The stated purpose of Juday is to teach a polarization-independent optical switch that is capable of “handling” incoming light with arbitrary polarization states to produce effects that are “invariant” to the incoming polarization states. See Juday at col. 2, lines 60-64 and Abstract.

The polarization-independent optical switch disclosed in Juday serves a fundamentally different purpose than the optical performance monitor of amended claim 1. For this reason, the structure of the optical switch disclosed in Juday is different than that of the claimed optical performance monitor. For example, the optical switch expressly recombines the polarized beams with a beam combiner (30), which is a necessary step in redirecting the combined beam to a specific output location using the reconfigurable liquid crystal device (35). These steps provide the optical switch with its switching functionality. By contrast, as recited in amended claim 1, the P-polarization beam and the rotated S-polarization beam are received and processed by the liquid crystal tunable filter as separate beams.

In addition, Juday is completely silent regarding the position or orientation of the combined beam relative to the reconfigurable liquid crystal device (35). By contrast, amended claim 1 recites the limitation that the beam waists of both the P-polarization beam and the rotated S-polarization beam are located substantially on the center of a liquid crystal cavity in the liquid crystal tunable filter. The Application makes clear that such a structure is advantageous since it reduces the parallelism requirement for the liquid crystal cavity, thereby making the recited optical performance monitor easier to manufacture and more cost effective. See, e.g., Application at p. 4, lines 7-10 and p. 7, line 20 – p. 8, line 4.

As the foregoing illustrates, Juday fails to teach or suggest each and every limitation of amended claim 1 and therefore does not anticipate or render obvious amended claim 1. Further, Li and Chen fail to cure the deficiencies of Juday set forth above. For these reasons, Applicant respectfully submits that amended claim 1 and claims 2-6, dependent thereon, are in condition for allowance and requests withdrawal of the §102 and §103 rejections of these claims.

Independent amended claims 7 and 11 recite limitations similar to those discussed above in connection with allowable amended claim 1 and therefore are allowable for at least the same

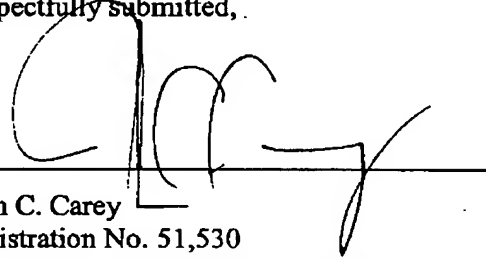
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reasons as amended claim 1. Since claims 8-10 and 11-14 depend from allowable claims 7 and 11, respectively, these claims also are in condition for allowance.

Conclusion

Based on the above remarks, Applicant believes that he has overcome all of the rejections set forth in the Office Action mailed January 19, 2005, and that the pending claims are in condition for allowance. If the Examiner has any questions, please contact the Applicants' undersigned representative at the number provided below.

Respectfully submitted, .



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